

## IN THE CLAIMS

1-40. (Cancelled)

41. (Currently amended) An attenuated *Actinobacillus pleuropneumoniae* bacterium, having a mutation in a gene which comprises a nucleotide sequence selected from the group consisting of SEQ ID NO.:1-56.

42-43. (Cancelled)

44. (Currently amended) The attenuated bacterium of claim 41, having a plurality of mutations, occurring within a single said gene or within different genes.

45. (Currently amended) A composition, comprising the attenuated bacterium of claim 41.

46. (Currently amended) The composition of claim 45, comprising a plurality of different attenuated *A. pleuropneumoniae* bacteria selected from the group consisting of bacteria having different mutations in the same virulence said gene, bacteria having similar or different mutations in two or more different genes, and mixtures thereof.

47. (Withdrawn) A method of treating an organism, comprising:  
administering to the organism the bacterium of claim 41;  
where the treatment is selected from the group consisting of preventing an infection with *A. pleuropneumoniae*, alleviating an infection with *A. pleuropneumoniae*, preventing symptoms associated with *A. pleuropneumoniae* infection, and alleviating symptoms associated with *A. pleuropneumoniae* infection.

48. (Previously presented) An attenuated bacterium having a mutation in a gene comprising a nucleotide sequence which is capable of hybridising to any one of the nucleotide sequences defined by SEQ ID NO:1-56, under conditions of moderate to high stringency.

49. (Withdrawn – Currently amended) A method of treating an organism, comprising:  
administering to the organism the attenuated bacterium of claim 48;  
~~where the treatment is selected from the group consisting of preventing an infection with a wild-type bacterium (or a different strain or serotype thereof), alleviating an infection with a wild-type bacterium (or a different strain or serotype thereof), preventing symptoms associated with an infection with a wild-type bacterium (or a different strain or serotype thereof), and alleviating symptoms associated with an infection with a wild-type bacterium (or a different strain or serotype thereof).~~

50-60. (Cancelled)

61. (New) The attenuated bacterium of claim 41, having a plurality of mutations, occurring within said gene and within different genes.

62. (New) The attenuated bacterium of claim 48, wherein said conditions of moderate to high stringency comprise a final wash in a buffer comprising 2xSSC/0.1SDS at 35-45° C.

63. (New) The attenuated bacterium of claim 48, wherein said conditions of moderate to high stringency comprise a final wash in a buffer comprising 0.2xSSC/0.1SDS at 65-75° C.

64. (New) The attenuated bacterium of claim 41, wherein said gene comprises the nucleotide sequence of SEQ ID NO: 51.

65. (New) The attenuated bacterium of claim 64, having a plurality of mutations, occurring within said gene.

66. (New) A composition, comprising the attenuated bacterium of claim 64.

67. (New) The composition of claim 66, comprising a plurality of different attenuated *A. pleuropneumoniae* bacteria selected from the group consisting of bacteria having different mutations in said gene, bacteria having mutations in two or more different genes, and mixtures thereof.

68. (Withdrawn - New) A method of treating an organism, comprising:  
administering to the organism the bacterium of claim 64;  
where the treatment is selected from the group consisting of preventing an  
infection with *A. pleuropneumoniae*, alleviating an infection with  
*A. pleuropneumoniae*, preventing symptoms associated with *A. pleuropneumoniae*  
infection, and alleviating symptoms associated with *A. pleuropneumoniae* infection.
69. (New) The attenuated bacterium of claim 64, having a plurality of mutations,  
occurring within said gene and within different genes.
70. (New) The attenuated bacterium of claim 48, wherein said gene comprises a  
nucleotide sequence which is capable of hybridising to the nucleotide sequence defined  
by SEQ ID NO: 51, under conditions of moderate to high stringency.
71. (Withdrawn – New) A method of treating an organism, comprising:  
administering to the organism the attenuated bacterium of claim 70.
72. (New) The attenuated bacterium of claim 70, wherein said conditions of moderate  
to high stringency comprise a final wash in a buffer comprising 2xSSC/0.1SDS at 35-45°  
C.
73. (New) The attenuated bacterium of claim 70, wherein said conditions of moderate  
to high stringency comprise a final wash in a buffer comprising 0.2xSSC/0.1SDS at 65-  
75° C.